

NCR: Yes / No

WORK ORDER NON-CONFORMANCE / UPDATE

DQA: _____ Date: _____

QA Closed: _____ Date: _____

Work Order: _____ Part No. _____ NCR No. _____	DISPOSITION Rework <input type="checkbox"/> Scrap <input type="checkbox"/> Use-as-is <input type="checkbox"/> Work Order Update <input type="checkbox"/>	AGAINST DEPARTMENT/PROCESS <table style="width: 100%;"> <tr> <td>Skid-tube <input type="checkbox"/></td> <td>Crosstube <input type="checkbox"/></td> <td>Water Jet <input type="checkbox"/></td> <td>Engineering <input type="checkbox"/></td> </tr> <tr> <td>Machining <input type="checkbox"/></td> <td>Small Fab <input type="checkbox"/></td> <td>Prod. Eng. Coord. <input type="checkbox"/></td> <td>Quality <input type="checkbox"/></td> </tr> <tr> <td>Thermoforming <input type="checkbox"/></td> <td>Finishing <input type="checkbox"/></td> <td>Rec/Store/Packaging <input type="checkbox"/></td> <td>Other <input type="checkbox"/></td> </tr> <tr> <td>Large Fab <input type="checkbox"/></td> <td>Composite <input type="checkbox"/></td> <td>Supplier <input type="checkbox"/></td> <td></td> </tr> </table>	Skid-tube <input type="checkbox"/>	Crosstube <input type="checkbox"/>	Water Jet <input type="checkbox"/>	Engineering <input type="checkbox"/>	Machining <input type="checkbox"/>	Small Fab <input type="checkbox"/>	Prod. Eng. Coord. <input type="checkbox"/>	Quality <input type="checkbox"/>	Thermoforming <input type="checkbox"/>	Finishing <input type="checkbox"/>	Rec/Store/Packaging <input type="checkbox"/>	Other <input type="checkbox"/>	Large Fab <input type="checkbox"/>	Composite <input type="checkbox"/>	Supplier <input type="checkbox"/>	
Skid-tube <input type="checkbox"/>	Crosstube <input type="checkbox"/>	Water Jet <input type="checkbox"/>	Engineering <input type="checkbox"/>															
Machining <input type="checkbox"/>	Small Fab <input type="checkbox"/>	Prod. Eng. Coord. <input type="checkbox"/>	Quality <input type="checkbox"/>															
Thermoforming <input type="checkbox"/>	Finishing <input type="checkbox"/>	Rec/Store/Packaging <input type="checkbox"/>	Other <input type="checkbox"/>															
Large Fab <input type="checkbox"/>	Composite <input type="checkbox"/>	Supplier <input type="checkbox"/>																

Root Cause	Date	Step	Qty	Description of work order update or Non-conformance	Initial Chief Eng.	Action Description	Sign & Date	Verification	QC Inspector
Doc/Data									
Equip/Tooling									
Operator									
Material									
Setup									
Other									
Process									
Supplier									
Training									
Unapproved									

FAULT CATEGORY

Landing Gear <input type="checkbox"/> Bending <input type="checkbox"/> Centre Not Concentric to O/S <input type="checkbox"/> Cracks <input type="checkbox"/> Crushed/Crimped <input type="checkbox"/> Cuffs <input type="checkbox"/> Heat Treat <input type="checkbox"/> Inspection Strip in Tube <input type="checkbox"/> Ripples in Bend <input type="checkbox"/> Torque Waves in Extrusion <input type="checkbox"/> Turning Sequence <input type="checkbox"/> Wave/Twist in Tube	General <input type="checkbox"/> Bend <input type="checkbox"/> BOM/Route <input type="checkbox"/> Broken/Damaged <input type="checkbox"/> Burrs <input type="checkbox"/> Contamination <input type="checkbox"/> Countersink <input type="checkbox"/> Cut Too Short <input type="checkbox"/> Drill Holes <input type="checkbox"/> Drawing <input type="checkbox"/> Finish <input type="checkbox"/> Folio	<input type="checkbox"/> Grain <input type="checkbox"/> Hardware <input type="checkbox"/> Inspection Incomplete <input type="checkbox"/> Instructions Incomplete/Unclear <input type="checkbox"/> Maintenance <input type="checkbox"/> Mislabeled <input type="checkbox"/> Misread <input type="checkbox"/> Offset <input type="checkbox"/> Out of Calibration <input type="checkbox"/> Out of Sequence <input type="checkbox"/> Outside Dimensions <input type="checkbox"/> Ovalized <input type="checkbox"/> Over/Under tolerance <input type="checkbox"/> Part Incorrect <input type="checkbox"/> Part Lost/Missing <input type="checkbox"/> Part Moved <input type="checkbox"/> Positioned Wrong <input type="checkbox"/> Power Loss/Surge <input type="checkbox"/> Pressure/Forced <input type="checkbox"/> Temperature/Cure <input type="checkbox"/> Weld <input type="checkbox"/> Wrong Stock Pulled <input type="checkbox"/> Other
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Work Order ID 94463

December-19-12 11:15:12 AM

94463

Page 2

Item ID: D3649-041

Accept

N9000040100

Setup Start ***NS1***

Revision ID:

Stop ***NS2***

Item Name: Tunnel Bottom Panel Assembly

Start Date: 12/19/12 Start Qty: 2.00

2

Cust Item ID:

Required Date: 1/11/13 Req'd Qty: 2.00

2

Customer:

Reference:

Approvals:

Process Plan:

Date:

Tooling:

Date:

Run Start ***NR1***

QC:

Date:

SPC (Y/N):

Date:

Stop ***NR2***

Sequence ID/
Work Center ID

Operation
Description

Set Up/
Run Hours

Tool ID Tool # Plan
Code Accept Reject Reject Insp.
Qty Qty Number Stamp

130

130

Brake NC

Brake NC

NC BRAKE

Memo

Form as per Dwg D3649

0.00

0.00

140

140

QC

Quality Control

QC5- Inspect part completeness to step on W/O

Memo

0.00

0.00

150

150

Small Fab

Small Fab

Small Fab

Memo

1- Form dimple for MS20427M3 rivet per dwg D3649*****ensure
dimples are on the proper side*****2-Assemble nutplates as per dwg
D3649

0.00

0.00

1361/17

10

1x

3/2/07

NCR: Yes / No

WORK ORDER NON-CONFORMANCE / UPDATE

DQA: _____ Date: _____

QA Closed: _____ Date: _____

Work Order: _____	DISPOSITION Rework <input type="checkbox"/> Scrap <input type="checkbox"/> Use-as-is <input type="checkbox"/> Work Order Update <input type="checkbox"/>	AGAINST DEPARTMENT/PROCESS			
Part No. _____		Skid-tube <input type="checkbox"/>	Crosstube <input type="checkbox"/>	Water Jet <input type="checkbox"/>	Engineering <input type="checkbox"/>
NCR No. _____		Machining <input type="checkbox"/>	Small Fab <input type="checkbox"/>	Prod. Eng. Coord. <input type="checkbox"/>	Quality <input type="checkbox"/>
		Thermoforming <input type="checkbox"/>	Finishing <input type="checkbox"/>	Rec/Store/Packaging <input type="checkbox"/>	Other <input type="checkbox"/>
		Large Fab <input type="checkbox"/>	Composite <input type="checkbox"/>	Supplier <input type="checkbox"/>	

Root Cause	Date	Step	Qty	Description of work order update or Non-conformance	Initial Chief Eng.	Action Description	Sign & Date	Verification	QC Inspector
Doc/Data									
Equip/Tooling									
Operator									
Material									
Setup									
Other									
Process									
Supplier									
Training									
Unapproved									

FAULT CATEGORY

Landing Gear <input type="checkbox"/> Bending <input type="checkbox"/> Centre Not Concentric to O/S <input type="checkbox"/> Cracks <input type="checkbox"/> Crushed/Crimped <input type="checkbox"/> Cuffs <input type="checkbox"/> Heat Treat <input type="checkbox"/> Inspection Strip in Tube <input type="checkbox"/> Ripples in Bend <input type="checkbox"/> Torque Waves in Extrusion <input type="checkbox"/> Turning Sequence <input type="checkbox"/> Wave/Twist in Tube	General <input type="checkbox"/> Bend <input type="checkbox"/> BOM/Route <input type="checkbox"/> Broken/Damaged <input type="checkbox"/> Burrs <input type="checkbox"/> Contamination <input type="checkbox"/> Countersink <input type="checkbox"/> Cut Too Short <input type="checkbox"/> Drill Holes <input type="checkbox"/> Drawing <input type="checkbox"/> Finish <input type="checkbox"/> Folio	<input type="checkbox"/> Grain <input type="checkbox"/> Hardware <input type="checkbox"/> Inspection Incomplete <input type="checkbox"/> Instructions Incomplete/Unclear <input type="checkbox"/> Maintenance <input type="checkbox"/> Mislabeled <input type="checkbox"/> Misread <input type="checkbox"/> Offset <input type="checkbox"/> Out of Calibration <input type="checkbox"/> Out of Sequence <input type="checkbox"/> Outside Dimensions	<input type="checkbox"/> Ovalized <input type="checkbox"/> Over/Under tolerance <input type="checkbox"/> Part Incorrect <input type="checkbox"/> Part Lost/Missing <input type="checkbox"/> Part Moved <input type="checkbox"/> Positioned Wrong <input type="checkbox"/> Power Loss/Surge	<input type="checkbox"/> Pressure/Forced <input type="checkbox"/> Temperature/Cure <input type="checkbox"/> Weld <input type="checkbox"/> Wrong Stock Pulled <input type="checkbox"/> Other
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Work Order ID 94463

December-19-12 11:15:12 AM

94463

Page 3

Item ID: D3649-041

Accept

N9000040100

Setup Start *NS1*

Revision ID:

Stop *NS2*

Item Name: Tunnel Bottom Panel Assembly

Start Date: 12/19/12 Start Qty: 2.00

2

Cust Item ID:

Required Date: 1/1/13 Req'd Qty: 2.00

2

Customer:

Reference:

Run Start *NR1*

Approvals: Process Plan:

Date:

Tooling:

Date:

Stop *NR2*

QC:

Date:

SPC (Y/N):

Date:

Sequence ID/
Work Center ID

Operation
Description

Set Up/
Run Hours

Tool ID Tool # Plan Code Accept Qty Reject Qty Reject Number Insp. Stamp

160

QC5- Inspect part completeness to step on W/O

0.00

160

QC

Memo

0.00

Quality Control

SHD
B.D-7

170

Identify as per dwg & Stock Location: ST 100

0.00

170

Packaging

Memo

0.00

Packaging

180

QC21- Final Inspection - Work Order Release

0.00

180

QC

Memo

0.00

Quality Control

13/2/14

MF
13-2-13

SH
13/02/13

NCR: Yes / No

WORK ORDER NON-CONFORMANCE / UPDATE

DQA: _____ Date: _____

QA Closed: _____ Date: _____

Work Order: _____	DISPOSITION Rework <input type="checkbox"/> Scrap <input type="checkbox"/> Use-as-is <input type="checkbox"/> Work Order Update <input type="checkbox"/>	AGAINST DEPARTMENT/PROCESS			
Part No. _____		Skid-tube <input type="checkbox"/>	Crosstube <input type="checkbox"/>	Water Jet <input type="checkbox"/>	Engineering <input type="checkbox"/>
NCR No. _____		Machining <input type="checkbox"/>	Small Fab <input type="checkbox"/>	Prod. Eng. Coord. <input type="checkbox"/>	Quality <input type="checkbox"/>
		Thermoforming <input type="checkbox"/>	Finishing <input type="checkbox"/>	Rec/Store/Packaging <input type="checkbox"/>	Other <input type="checkbox"/>
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Picklist Print

December-19-12 11:15:11 AM

Page 1

Work Order ID: 94463

Parent Item: D3649-041

Parent Item Name: Tunnel Bottom Panel Assembly

Start Date: 12/19/12

Start Qty: 2.00

Required Date: 1/11/13

Required Qty: 2.00

Comments: IPP Rev:A New Issue 07-09-26 EC verified by: DD
IPP Rev:B ECN 1113P 08-01-22 DD verified by: EC
IPP Rev:C EcN1162 08-04-02 DD verified by: EC

Component Item ID/ Item Name	Replacement Item ID	Mfg/ Purch	Bin Item	Primary Location	Last Location	Route Seq ID	Unit of Measure	Qty on Hand	Qty per Kit	Total Qty	Qty Issued	Date Issued	Status
M304S26GA 304/316 0.018 SHEET		Purchased	No			150	sf	422.3400	6.069	12.776842	13-1-8		

Location	Loc Qty	Loc Code
MAT020	422.34	
117798	69.28	
122753	97.06	
123135	256	

MS20427M3-3 Rivet	Purchased	No				110	Each	155.0000	88	176			
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Location	Loc Qty	Loc Code
GA	155	
123352	155	

MS21060-3K Nut Plate	Purchased	No				150	Each	27.0000	22	44			
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Location	Loc Qty	Loc Code
ST316	27	
123168	27	

MS21062-3K Nut Plate	Purchased	No				150	Each	20.0000	22	44			
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Location	Loc Qty	Loc Code
ST317	20	
122452	20	

EP 13/02/07

M124231
418x

EP 13/02/07

M124486 18x

M124291 4x

EP 13/02/07

M124316
208x



DART AEROSPACE LTD		Work Order:	94463
Description: Tunnel Bottom Panel		Part Number:	D3649-1
Inspection Dwg: D3649	Rev: B	Page 1 of 2	

FIRST ARTICLE INSPECTION CHECKLIST

☒ First Article ☐ Prototype

Drawing Dimension	Tolerance	Actual Dimension	Accept	Reject	Method of Inspection	Comments
Ø0.098	+0.004/-0.001	101	1		3"	
Ø0.196	+0.005/-0.001	199	1			
Ø0.250	+0.005/-0.001	252	1			
0.400	+/-0.010	401	1			
0.385	+/-0.010	389	1			
0.250	+/-0.010	251	1			
44.57	+/-0.030	44.57	1		T B4	
11.70	+/-0.030	11.696	1		T	
3.370	+/-0.030	3.368	1			
13.76	+/-0.030	13.75	1		T	
4.300	+/-0.010	4.298	1			
10.11	+/-0.030	10.106	1		T	
12.90	+/-0.030	12.90	1		T	
16.61	+/-0.030	16.6	1		T	
15.80	+/-0.030	15.80	1		T	
3.950	+/-0.010	3.947	1			
0.42	+/-0.030	0.417	1			
0.41	+/-0.030	0.41	1			
0.85	+/-0.030	0.852	1			
19.64	+/-0.030	19.64	1		T	
0.54	+/-0.030	0.54	1			
1.400	+/-0.010	1.400	1			
2.63	+/-0.030	2.629	1			
2.93	+/-0.030	2.911	1			
1.49	+/-0.030	1.49	1			
5.98	+/-0.030	5.983	1			
0.54	+/-0.030	0.543	1			
2.20	+/-0.030	2.197	1			
2.75	+/-0.030	2.749	1			
2.48	+/-0.030	2.473	1			



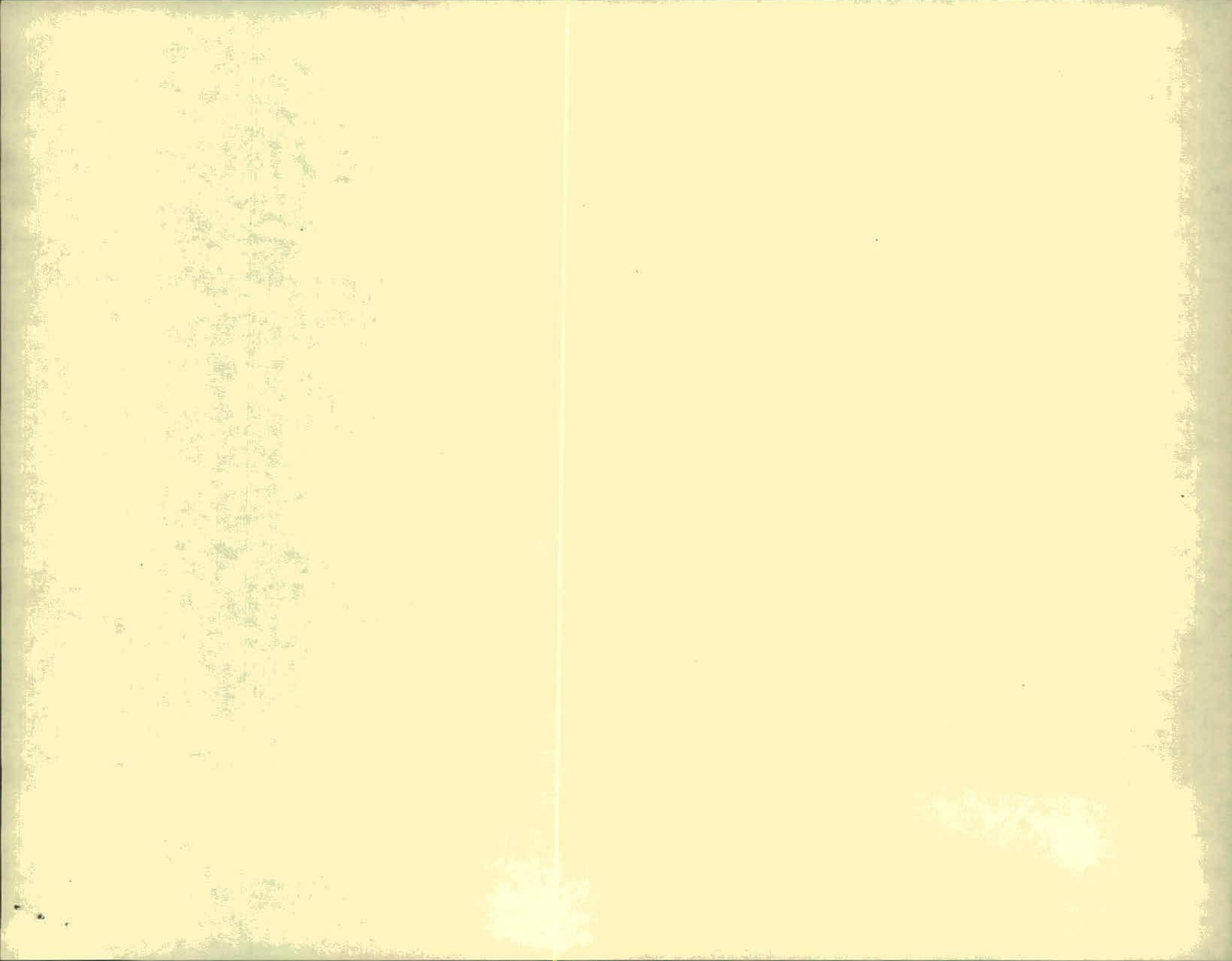
DART AEROSPACE LTD		Work Order:	94463
Description: Tunnel Bottom Panel		Part Number:	D3649-1
Inspection Dwg: D3649	Rev: B	Page 2 of 2	

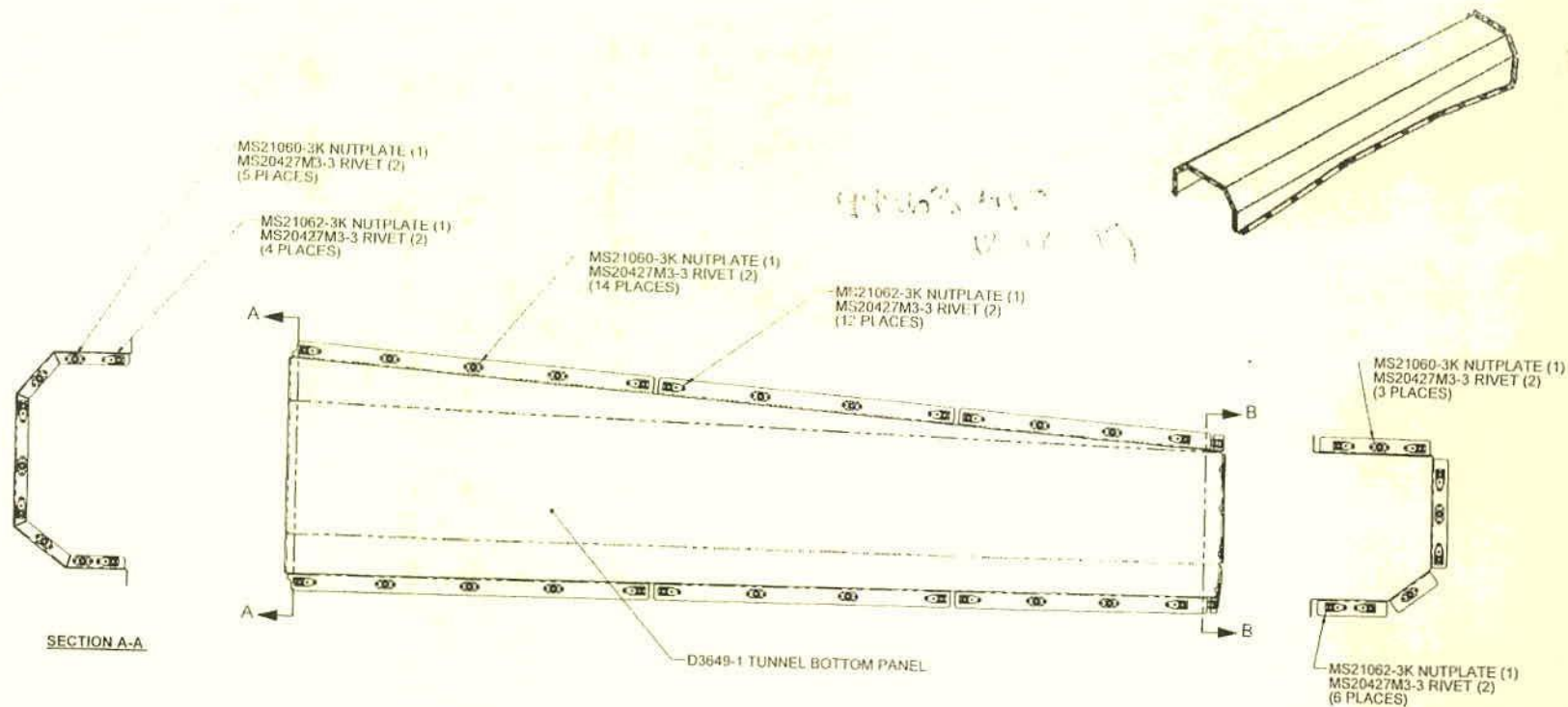
FIRST ARTICLE INSPECTION CHECKLIST

☒ First Article ☐ Prototype

Drawing Dimension	Tolerance	Actual Dimension	Accept	Reject	Method of Inspection	Comments
1.16	+/-0.030	1.163	2		✓ B2	
3.38	+/-0.030	3.377	2		✓	
2.00	+/-0.030	2.00	2		✓	
0.90	+/-0.030	0.901	2		✓	
16.64	+/-0.030	16.64	2		T B2	
0.48	+/-0.030	0.479	2		✓	
13.80	+/-0.030	13.80	2		T	
0.46	+/-0.030	0.461	2		✓	
11.76	+/-0.030	11.76	2		T	
1.23	+/-0.030	1.216	2		✓	
0.88	+/-0.030	0.88	2		✓	
18.46	+/-0.030	18.46	2		T	
5.23	+/-0.030	5.236	2		✓	
1.932	+/-0.010	1.937	2		✓	
1.943	+/-0.010	1.940	2		✓	
5.02	+/-0.030	5.024	2		✓	
1.820	+/-0.010	1.823	2		✓	
0.70	+/-0.030	0.701	2		✓	
2.100	+/-0.010	2.099	2		✓	
2.33	+/-0.030	2.337	2		✓	
0.94	+/-0.030	0.939	2		✓	
3.30	+/-0.030	3.301	2		✓	
1.900	+/-0.010	1.90	2		✓	
0.61	+/-0.030	0.61	2		✓	

Measured by: B	Audited by: B	Prototype Approval:	N/A
Date: 13-1-0	Date: 13-1-10	Date:	N/A
Rev	Date	Change	
A	08.04.17	New Issue	
P/O D3649-041			Revised by: KJ/DD
			Approved: [Signature]





SECTION A-A

D3649-1 TUNNEL BOTTOM PANEL

SECTION B-B

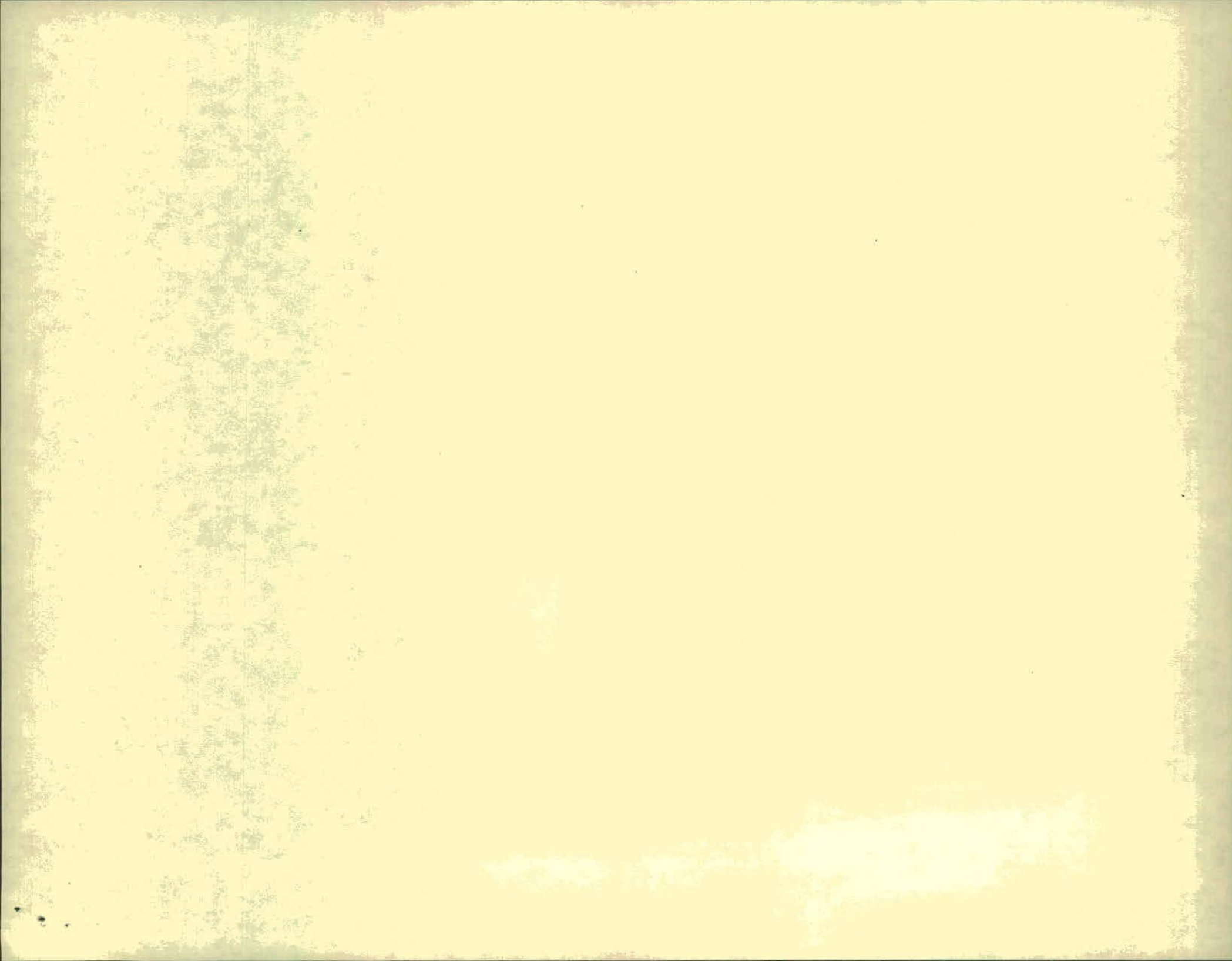
D3649-041 BOTTOM PANEL ASSEMBLY

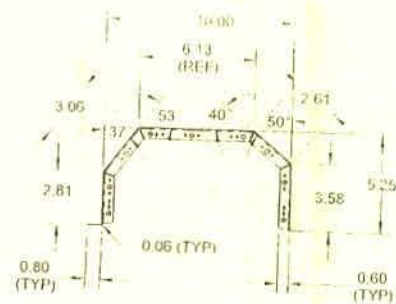
PART LIST

QTY	PART NUMBER	DESCRIPTION
X	D3649-041	TUNNEL BOTTOM PANEL ASSY.
1	D3649-1	TUNNEL BOTTOM PANEL
88	MS20427M3-3	RIVET
22	MS21060-3K	NUTPLATE
22	MS21062-3K	NUTPLATE

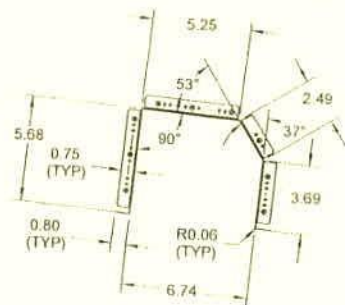
B	PAGE 3 MS20427M3 WAS MS20427M-3	RF	08.01.07
A	NEW ISSUE	RF	07.11.07
REV	DESCRIPTION	BY	DATE
DESIGN	RF	DART AEROSPACE LTD	
DRAWN	RF	HAWKESBURY, ONTARIO, CANADA	
CHECKED	10	DRAWING NO.	REV. B
MFG APPR	21	D3649	SHEET 1 OF 3
APPROVED	21	TITLE	SCALE
DE APPR	21	BOTTOM PANEL ASSEMBLY	1:5
DATE	08.01.07	COPYRIGHT © 2007 BY DART AEROSPACE LTD	

RELEASED
28-03-26/11/07



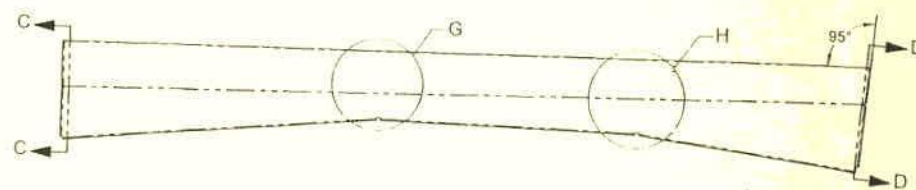
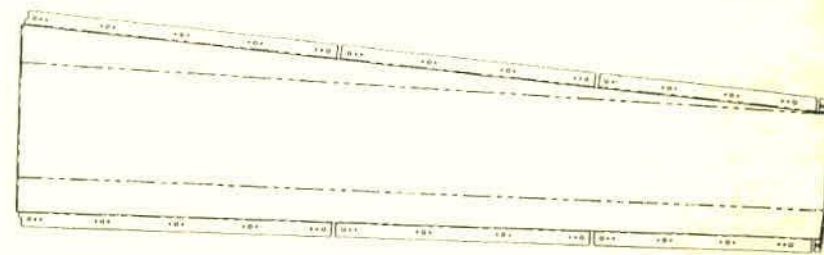
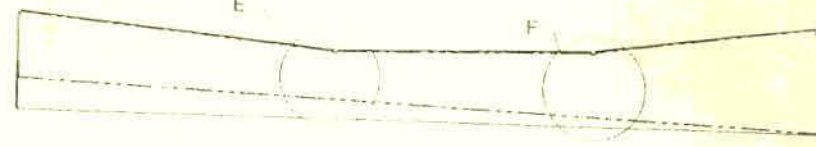


SECTION C-C



SECTION D-D

D3649-1 TUNNEL BOTTOM PANEL
(MAKE FROM D3649-1F)



DESIGN	RF	DART AEROSPACE LTD HAWKESBURY, ONTARIO, CANADA DRAWING NO. D3649 TITLE BOTTOM PANEL ASSEMBLY SCALE 1:6 COPYRIGHT © 2007 BY DART AEROSPACE LTD <small>THIS DRAWING IS THE PROPERTY OF DART AEROSPACE LTD. IT IS TO BE USED FOR THE PURPOSES SPECIFIED IN THE ORDER. IT IS NOT TO BE REPRODUCED OR TRANSMITTED IN ANY FORM OR BY ANY MEANS, ELECTRONIC OR MECHANICAL, INCLUDING PHOTOCOPYING, RECORDING, OR BY ANY INFORMATION STORAGE AND RETRIEVAL SYSTEM, WITHOUT PERMISSION IN WRITING FROM DART AEROSPACE LTD.</small>	
DRAWN	RF		REV. B
CHECKED	RF		SHEET 2 OF 3
MFG. APPR.	RF		SCALE
APPROVED	RF		1:6
DE APPR.	RF		
DATE	08.01.07		



